

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed December 8, 2009. At the time of the Final Office Action, Claims 1-15 were pending in this Application. Claims 1-15 were rejected. Claim 1 is herein amended. Applicants respectfully request reconsideration and favorable action in this case.

Claim Objections

Claim 1 was objected due to the redundant language regarding recognizing the sensor as a signal-value-range multiplex output type sensor if the first and second conditions have been met. Accordingly, Applicants have amended Claim 1 to remove this redundant language, as suggested by the Examiner.

Rejections under 35 U.S.C. §103

Claims 1-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,982,290 issued to John G. Berger et al. ("*Berger*") in view of U.S. Patent No. 6,111,530 issued to Sung Hm Yun ("*Yun*") and U.S. Patent Application Publication No. 2004/0158435 filed by Richard D. Slates et al. ("*Slates*").

Applicants respectfully traverse and submit the cited art combination, even if proper, which Applicants do not concede, does not render the claimed embodiment of the invention obvious.

In order to establish a prima facie case of obviousness, the references cited by the Examiner must disclose all claimed limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Even if each limitation is disclosed in a combination of references, however, a claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). Rather, the Examiner must identify an apparent reason to combine the known elements in the fashion claimed. *Id.* "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

Finally, the reason must be free of the distortion caused by hindsight bias and may not rely on ex post reasoning. *KSR*, 127 S.Ct. at 1742. In addition, evidence that such a combination was uniquely challenging or difficult tends to show that a claim was not obvious. *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc. and Mattel, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007), citing *KSR*, 127 S.Ct. at 1741.

Applicants submit that the proposed combination of *Berger*, *Yun*, and *Slate* fails to teach the limitations of independent Claims 1 and 11. In particular, none of these references teaches anything remotely similar to the central concept recited in Claims 1 and 11: *determining whether or not a particular sensor is a signal-value-range multiplex output type sensor, i.e., a sensor having at least two different outputs that are multiplexed.*

The Examiner is interpreting a “signal-value-range multiplex output type sensor” as a “digital sensor” and a non-“signal-value-range multiplex output type sensor” as an “analog sensor.” (Final Office Action, top of pages 3 and 6). This interpretation is not reasonable in view of the explicit language of the claims, or even a cursory reading of the specification. For example, claim 1 recites “signal-value-range *multiplex output type sensor*.” On or ordinary skill in the art would understand based on the explicit language “multiplex output type sensor” that this is a sensor that has *output signals that are multiplexed*.

Moreover, in order to prevent any possible confusion regarding the term “signal-value-range multiplex output type sensor,” Applicants amended Claim 1 in the previous Response to Office Action to explicitly recite “*a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed.*” Thus, Claim 1 explicitly defines a “signal-value-range multiplex output type sensor” as a sensor “*having at least two different outputs that are multiplexed.*” Further, Claim 1 explicitly recites the step of *determining whether or not a particular sensor is a signal-value-range multiplex output type sensor, i.e., a sensor having at least two different outputs that are multiplexed* (“determining whether the sensor is (a) a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed, or (b) not a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed”). This is clearly different from determining whether a sensor is a *digital sensor* or an *analog*

sensor. Thus, the Examiner's attempt to reduce Applicants' invention to distinguishing a *digital sensor* from an *analog sensor* is mistaken and misses the entire point of Applicants' claimed invention.

None of *Berger*, *Yun*, or *Slate* teach anything about determining whether or not a sensor is a signal-value-range multiplex output type sensor, i.e., a sensor having at least two different outputs that are multiplexed. In fact, none of *Berger*, *Yun*, or *Slate* teach anything about a "**sensor having at least two different outputs that are multiplexed**" at all. The Examiner argues that *Berger* teaches this feature at: "*Berger*, figure 1, two different output from sensor 18 and 18' are multiplexed to data wire 16." (Final Office Action, top of page 5).

For reference, Figure 1 of *Berger* shows:

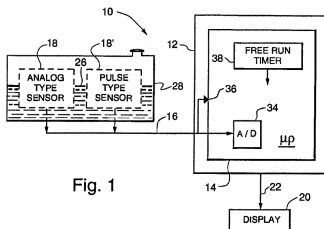


Fig. 1

However, *Berger* unquestionably does not teach any multiplexing of sensor outputs. *Berger* teaches a technique for "determining whether *the* liquid level sensor installed in a system is an analog *or* a digital type sensor." (col. 1, lines 56-59; emphasis added). The system is "operable with *either* an analog type liquid level sensor *or* a digital type liquid level sensor connected to an input wire." (col. 2, lines 7-9; emphasis added). Referring specifically to Figure 1, *Berger* teaches "In FIG. 1, a liquid level indicator system 10 according to the invention comprises a controller 12 having a microprocessor 14 connected by an analog data wire 16 to *either* an analog type liquid level sensor 18 *or* a digital or pulse type liquid level sensor 18' ..." (col. 2, lines 59-63; emphasis added).

Thus, *Berger* makes it clear that there is one liquid level sensor -- *either* an analog type liquid level sensor 18 *or* a digital or pulse type liquid level sensor 18 -- connected to wire 16, which is presumably why the sensors 18 and 18' are illustrated using dashed lines. Thus, there clearly can be no multiplexing of signals from sensors 18 and 18'. Further, *Berger* never mentions or suggests any multiplexing of signals, much less multiplexing output signals from a single sensor, as recited in Applicants' claims. Further, both *Yun* and *Slate* also fail to mention or suggests anything about multiplexing of signals, much less multiplexing output signals from a single sensor, as recited in Applicants' claims.

For at least these reasons, Applicants respectfully submit that independent Claims 1, 6, and 11 are patentable over *Berger*, *Yun*, and *Slate*. Therefore, Applicants respectfully request reconsideration and allowance of Claims 1, 6, and 11, and all claims that depend therefrom.

CONCLUSION

Applicants have made an earnest effort to place this case in condition for allowance in light of the remarks set forth above. Applicants respectfully request reconsideration of the pending claims.

Applicants believe there are no fees due at this time. However, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-4871 of King & Spalding L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.457.2030.

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